



## Biology Toolkit: Indicator 1.4.7

Student Handout: Biology: Indicator 1.4.7

### Goal 1.0 Skills And Processes

Expectation 1.4 The student will demonstrate that data analysis is a vital aspect of the process of scientific inquiry and communication.

Indicator 1.4.7 The student will determine the sources of error that limit the accuracy or precision of experimental results.

### Public Release - Selected Response Item - Released in 2009

Biology Indicator 1.4.7

Use the [technical passage and drawing](#) to answer the following item.

Which is one reason that the estimates for the bog turtle population may be inaccurate?

- A. Bog turtles are small and can hide well.
- B. There are too many turtles to count accurately.
- C. Bog turtles are mistaken for other types of turtles.
- D. Population data from precolonial times is incomplete.

Correct Answer

- C. Bog turtles are mistaken for other types of turtles.

## Item

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## Handouts

### BOG TURTLES

One of the smallest turtles in the world is found along the east coast of the United States from Massachusetts to Georgia. The bog turtle, measuring only 100 millimeters in length, was unknown in Maryland before 1941. A drawing of a bog turtle is shown below.

Studies conducted in recent decades verified that Maryland was included in the range of the bog turtle. It was often misidentified because the colorful orange patterns on its head and neck resembled other turtles. To learn more about the bog turtle, scientists conducted a survey of its habitat sites. The results of the survey led to a more thorough investigation of bog turtle sites by the Maryland Department of Natural Resources. As a result, the number of sites increased from one verified site in 1944 to 177 verified sites in 1984.

Known bog turtle sites are less than one acre in size. Bog turtles prefer to live in areas of low-lying wetlands, swamps, and meadows that are soft and muddy. These habitats aid in body temperature regulation and egg incubation. Ground water springs provide an area where the turtles can spend winter without the threat of freezing. The vegetation in the bog turtle habitat consists of cattails, sphagnum moss, and various native grasses. Although the bog turtle population may never have been large, habitats since precolonial times have declined because of development and changing farm practices.

The state of Maryland added the bog turtle to the list of endangered species in 1972. Steps to protect its habitat include land use management, bog preservation, private landowner cooperation, management of invasive plant species, as well as captive breeding programs. By adding federal protection to the existing protection provided at the state level, one of the smallest turtles in the world may continue to survive.